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PREDICTORS OF INAPPROPRIATE IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR DISCHARGES

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Defibrillation Threshold Testing and Predictors of Shocks in ICD Recipients
Abstract Category: 29. Defibrillation/Implantable Antiarrhythmia Devices
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Background: The implantable cardioverter defibrillator (ICD) is the mainstay treatment for ventricular tachyarrhythmias due to its significant impact on mortality. ICD discharges may be appropriate or inappropriate and may lead to frequent hospitalizations, and decreased quality of life.

Methods: Analysis of 461 patients (372 males; mean age 68±13 years (min-max:23-94 YRS); follow-up 9±12.7 months was undertaken. Clinical and echocardiographic parameters (age, gender, hypertension, diabetes, coronary artery bypass, syncope, atrial fibrillation [AFIB], left ventricular ejection fraction, left ventricular end diastolic dimension [LVEDd], left ventricular end systolic dimension [LVEDs], prior valvular surgery and medications [digitalis, beta blockers, ace inhibitors]) were assessed to determine association with ICD discharge

Results: The incidence of ICD discharge was 0.36 shocks per follow-up year (125 discharges during 343.8 person-years follow up). A total of 84 subjects experienced a shock (appropriate or inappropriate); 52 had appropriate shocks alone and 35 subjects experienced at least 1 inappropriate shock. Of the 35 subjects who experienced an inappropriate shock, 8 had more than 1 inappropriate shock. A significantly higher proportion of subjects who had a mitral/aortic valve repair experienced an inappropriate shock [12.8% (1/133) vs. 5.5% (18/328); p=0.011]. There was a significantly higher proportion of subjects in the group with normal LVEDs (1.8-4 cm) who experienced an inappropriate shock than those in the abnormal LVEDs group (<1.8cm or >4cm)(14.6% vs 5.1% p=0.033). There was also a significantly higher proportion of subjects taking digitalis who experienced an inappropriate shock than those in the non-digitalis group (11.7% [18/154] vs 5.7% [17/297]; p=0.04)

Conclusions: The main parameters associated with inappropriate ICD discharge were a history of any valve repair, a normal LVEDs, and concurrent use of digitalis. Further investigation regarding the association of these factors with ICD discharge may facilitate post-implantation management of patients to limit the occurrences of inappropriate ICD discharges and their pyschosocial sequelae.